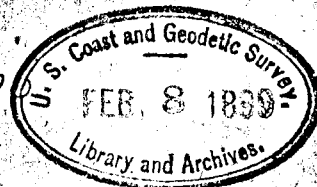


2369

Diag. Cht. Nos 9302 & 937



U. S. COAST AND GEODETIC SURVEY.

*Henry S. Pritchett*, Superintendent.

State: *Alaska*

DESCRIPTIVE REPORT.

*Hydro & Taper.* Sheet No. *2369*

LOCALITY:

*The Kripniyuk River  
Entrance and Vicinity,  
Bering Sea*

1898.

CHIEF OF PARTY:

*J. Pratt, Asst*

U. S. C. AND G. SURVEY,  
LIBRARY AND ARCHIVES  
FEB 8 1899  
50392

2369

2369

FEB.-7. 9. 02062

U. S. Coast and Geodetic Survey,  
Dr. H. S. Pritchett, Superintendent,

Hydrography and Topography

of the

Kripniyuk River Entrance,

Coast of Alaska,

by the

Party in charge of J. F. Pratt, Assistant.

Began Aug. 31, 1898.

Ended Sept. 7, 1898.

Scale 1/20 000

(Two pages of title and 12 pages)

Statistics of Hydrography, Kripniyuk River Entrance Sheet.

Date	letter	number of,				vessel
		vol	angles & positions	soundings	miles. statute	
1898.						
Aug. 26	brown G	11&12	0	280	6,	Str. Taku
Sep. 7	H	12	40	735	20	" "
Sep. 3	carmine R	17	63	723	13.	Lch. Delta
Aug. 31	green e	9	13	447	4,	Whaleboat, No. 1
<u>Recapitulation.</u>						
Str. Taku	2		40	1015	26	
Lch. Delta	1		63	723	13	
W. B. No. 1	1		13	447	4	
Total	4		116	2185	43	

#

#

#

#

#

#

#

#

#

#

#

#

#

Krypniyuk River Entrance Sheet, Descriptive Report.

Soundings and Tidal Data.

The tides used in reducing the soundings, are tabulated from the sheet of the self registering gauge at Kripniyuk.

For September 7<sup>th</sup> the reductions are derived from extensions from the foregoing and the observations at Niklakowik Tidal Station.

Adopted Low Water at Krypniyuk ~~1.2~~ feet

" " " " Kwiklochun ~~2.33~~ feet

Zero of Kwiklochun Gauge above zero of Krypniyuk Gauge ~~0.23~~ feet.

The Plane of Reference used for the Soundings, is the mean of the low waters at Kripniyuk and Kwiklochun. (Derived as follows.)

Kwiklochun reduced to Krypniyuk Staff ~~2.33~~ ~~0.23~~ ~~2.10~~ feet.

Mean of Krypniyuk and Kwiklochun  $(1.2 + 2.10) \div 2 = 1.65$  the datum plane used.

The highest tide observed was 6.9 feet on August 29<sup>th</sup>.

The lowest tide observed was 0.9 feet on September 3<sup>d</sup>.

The mean rise and fall, for 9 days, was <sup>4.9</sup> 4.9 feet, (Maximum 6.6 feet, minimum 4.1 feet.)

Difference in Time ----- of ----- High Water  
between  
Kripniyuk Entrance ----- and ----- Kussilvak Entrance  
 (Niokkikowik Tide Staff)

Date	Kripniyuk	Kussilvak	Kripniyuk Kussilvak minus
1899.			
Aug. 29	11 <sup>h</sup> 50 <sup>m</sup>	13 <sup>h</sup> 00 <sup>m</sup>	<del>1</del> 1 <sup>h</sup> 10 <sup>m</sup>
" 30	13 58	12 50	<del>1</del> 1 08
" 31	19 00	15 00	( <del>4</del> 4 00)
Sep. 1	14 00	15 30	<del>1</del> 1 30
" 2	14 20	15 38	<del>1</del> 1 18
" 3	15 10	16 30	<del>1</del> 1 20
	Mean		<del>0</del> 0 50✓

That is, the high water (mean of five days) is about 50 minutes earlier at Kripniyuk Entrance than at the Kussilvak Entrance with with an uncertainty of about one hour.

#

#

#

#

#

#

#

#

#

#

#

#

#

#

#

#



Difference in time ----- of ----- Low Water  
between  
Kripniyuk Entrance ----- and ----- Kussilvak Entrance.  
 (Nikolaiakowik tide Staff)

Date	Kripniyuk	Kussilvak	Kripniyuk minus Kussilvak
1898.			
Aug. 29	6h 50 <sup>m</sup>	9h 22 <sup>m</sup>	2h 32 <sup>m</sup>
" 30	7 50	9 38	1 48
" 31	8 50	10 15	1 25
Sep. 1	10 00	11 55	1 55
" 2	8 50	10 38	1 48
" 3	11 00	13 00	2 00
		Mean	1 54

That is the low water (mean of 6 days) occurs about two hours later at Kussilvak Entrance than at Kripniyuk Entrance, with an uncertainty of about one hour.

Comparison of High Water and Low Water slack from KwiklochunSelf Registering Tide Gauge to Kripniyuk Self Registering Tide Gauge.

Date	H.W.	H.W.	Kwik.	L.W.	L.W.	Kwik.	Wind at Kripniyuk	
	Kwik.	Krip	Krip	Kwik.	Krip.	Krip	Force	Direc.
1898.								
Aug. 29	6,2 <sup>f</sup>	6,9 <sup>f</sup>	0,7 <sup>f</sup>	2,6 <sup>f</sup>	1,3 <sup>f</sup>	1,3 <sup>f</sup>	5	S.E.
" 30	---	5,9	---	2,3	1,4	0,9	6	SXE
" 31	4,3	5,3	1,0	2,4	1,0	1,4	4	S.W.
Sep. 1	5,2	6,1	0,9	2,4	1,1	1,3	3	S.W.
" 2	5,9	6,7	0,8	3,0	1,6	1,4	7	S.WXW.
" 3	4,1	5,2	1,1	2,3	0,9	1,4	5	N.E.
" 5	4,1	5,3	1,2	2,5	1,2	1,3	5	EXN SSE
" 6	5,4	6,6	1,2	2,5	1,2	1,3	5	SSW
Sum		6,9				10,3		
		Mean				0,23		

Zero of Kwiklochun Gauge above zero of Kripniyuk Gauge - 0,23 feet.

#

#

#

#

#

#

#

#

#

#

#

#

#

#

#

Kripniyuk River Entrance Sheet, Descriptive Report.

Kripniyuk River:-

The Kripniyuk River, (variously pronounced by the Eskimos Arip-ni-yuk and Kip- ni-yuk) is called on the C. & G.S. charts the Black or Kipniak River. It is a narrow but deep stream about 200 metres wide near the mouth. As far as explored, about six miles up, its course is a series of great bends and its characteristics are a deep channel and abrupt and rapidly caving banks on one side and and shoal low banks on the opposite. It is said by the natives, head south of Kussilvak Mountain, near the base of which it flows and to have farther down in its course a great lake. This lake, acting as a tidal reservoir, probably accounts for the great tidal current flowing in and out of this little river.

Channel outside:-

At its mouth the channel, still very narrow, is deflected nearly at right angles towards the southwest for about three miles. (about two miles off the coast) when it turns, abruptly again, towards the northwest, which course it appears to follow out to sea. The outer end of the channel was not explored the lake not succeeding in following it either in coming in or going out. The ocean, or Bering's Sea swell is encountered about five miles off shore in this general locality. The characteristics are similar to those of the Kussilvak Bar, dry



shoals in spots at low tide and surf on some of the bars even in calm weather.

#### Bottom and Drift.

The bottom is everywhere a fine bluish mud, free from rock, gravel or coarse sand. There are no snags in the channel but some are seen, greatly magnified by mirage, on the highest shoal near the shore. Very little drift wood is found near the river, being pretty well cleared away by the natives for their use. About four or five miles from the river, in either direction, it becomes more plentiful along the coast. This drift apparently all comes from the Yukon, as there appears to be none brought down by the Kripniyuk; the Eskimos say there are no trees about its head waters and that they are obliged to take logs from the coast for their settlements up the river.

#### Commerce.

Nothing was heard of any vessel having entered the Kripniyuk before the Taku; though the two steamers which entered the Kussilvak mouth this season probably came within sight of the coast here, as they had native pilots from this settlement. It is doubtful if the Kripniyuk mouth would be of any advantage in connection with Yukon commerce, as the channel to it from Berings Sea is about as difficult and probably shoaler than the Kussilvak entrance. To go from the Kripniyuk to the

Kussilvak it is necessary for a vessel to go to the outer edge of the bars on account of the great shoals laying northwest of the Kripniyuk Entrance.

#### Currents.

The river affords well protected anchorage, but with scant swinging room and very strong tidal currents. August 26<sup>th</sup> 6<sup>h</sup> P.M. the current, with flood tide, was flowing into the river at the rate of 2,3 knots per hour, and September 2<sup>d</sup>, 2<sup>h</sup> 30<sup>m</sup> P.M. it was 1,9 knots flowing out.

There is considerable lag between stand and slack at each ebb and flood.

#### Other streams.

About two miles above the mouth of the Kripniyuk, the Kripniyagok River joins it, this latter, as far as explored, (about two miles up) is a narrow stream, about 50 metres wide, and very tortuous. About a mile above its mouth it is bordered by low ridges, perhaps 15 feet high, being the only elevated land in this area. Both this and the Kripniyuk, are said by the natives, to be navigable for boats, as large as the steam launches used this season, (32 by 8 and 21<sup>1</sup>/<sub>2</sub> feet draft,) for long distances.

The coast in both directions is intersected at frequent intervals by small tidal streams. The largest and the only ones that could not be forded at low tide are the Kwegapak and the Kwikuk.

It is impracticable to walk along these shores at high tide, as many of these channels then have 5 or 6 feet of water in them. most of them diminish rapidly in size as they go back from the coast.

The natives state that the Kripniyuk has two connections with the Yukon, the Kiangelevik emptying near the mouth of the Kwemeluk, and the Anukchuk, connecting with the Akularak.

#### Tides

There are two well defined diurnal tides here.

#### Water.

The water in the Kripniyuk is usually slightly brackish, only after a long outflowing tide is it perfectly fresh. It has the brownish color of the tundra ponds, quite different from the Yukon.

Fresh water may be found in the ponds on the south side of the river.

#### Topography.

The country throughout this area is extremely marshy, interspersed with ponds and cut by numberless little tidal sloughs. The ponds, within the limits of this sheet, south of the river are fresh and those north salty.

The walking is every where laborious, except along a narrow strip, perhaps 20 metres wide, of firm land which is found for a distance along the south bank of the river, the current side, and along the coast from S.W. Base triangulation

Two pages of title and 12 pages.

9

station, to the southwest as far as explored; this slight bank of solid land curves in as it approaches the river evidently indicating a former coast line. It is here strewn with trunks of very large trees nearly decayed. Some drift was seen far back from the coast in places, indicating that almost all this area is sometimes flooded.

The only elevated land to be seen any where nearer than Kussilvak Mountain and those back of Cape Dyer (called by the Eskimos As-ken-ok) is the low ridge mentioned along the Kripniyagok; the country is otherwise perfectly flat as far as the eye can reach.

On a clear day the Kussilvak Mt. and the three hills south of the Ulokot stand out, ~~and~~ sharply, like islands in the sea.

#### Flats.

At extreme low tide there are extensive bare mud flats all along this coast, much wider north of the river (sometimes nearly a mile out), according to the Eskimos, it is very shoal for several miles out everywhere except in the Kripniyuk Channel

#### Vegetation.

There are no trees or bushes, as far as the eye can reach, in all this area; the only vegetation is the marsh and other grasses, wild flowers and a few creeping salmon berries.

#### Game and Fish.

During season, ducks, geese and swan are very plentiful

over the marshes and form an important item of the natives food.

Few or no salmon are obtained in this river, as far as could be ascertained, but the natives had, in September, the banks lined with their fish traps for a small white fish.

#### Settlements.

The Eskimo settlement at the junction of the two rivers, (called Krip-ni-yuk-o-miut) is the largest seen during the season. In accordance with the common custom it is about equally divided on the two sides of the smaller stream. There were 30 houses mostly substantially built of drift logs. The natives seemed to be more squalid in their method of living than those further north; they had little to offer in trade, in the winter they all migrate up the river, to the neighborhood of Kus-silvak Mountain, to avoid the storms of the coast. Their winter village is called Isowoktalamut.

The village near the mouth of the Kripniyuk, is not more than two feet above ordinary high water and is doubtless flooded at extraordinary tides.

The only other settlements in this area are the two small ones called Kwikagamut on the Kwikuk River.

#### Control.

The control of this sheet depends on a rapid triangulation the extreme stations being concluded. A base two and one half miles long was laid out and measured <sup>with</sup> a steel tape twice in

one day. The orientation depends on an astronomical azimuth at Kripniyuk Astronomical Station.

The Geographical Positions depend on an approximate connection between End Triangulation Station and the Kussilvak triangulation. (See Descriptive Report of the Kussilvak Bar Sheet.) This was thought preferable to using, independently, the approximate astronomical latitude and longitude at Kripniyuk. The names of the triangulation stations are in red on this sheet.

#### Topography.

The Topography on this sheet is transferred from a plane table survey by Assistant G.R. Putnam, with additions from a traverse line by Foreman H.M.W. Edmonds, M.D. between Tired and Creek Triangulation Stations, and a traverse line by Assistant F.A. Young up the Kripniyuk River.

Dr. Edmonds states that the coast line southwest from Creek Triangulation Station continued in the given direction as far as he could see.

#### Soundings.

The outer portion of the soundings by the Taku on Sept. 7<sup>th</sup>. (H. day) must be considered as only approximate in position, being dependent, for positions, on patent log readings, compass directions and time.



Frozen Ground.

At the astronomical station at Kripniyuk the ground was found frozen 30 inches below the surface on August 28'th, 1898. and to this distance there were a number of successive layers of turf covered with sediment.



Ass't. Chief of Party.